

Domain Controller and Client VM Setup in Azure

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Project Overview

Objective:

Deploy a Windows Server 2025 Domain Controller and a Windows 11 Client VM in Microsoft Azure, configure network connectivity, and verify DNS resolution and communication between the two systems.

Summary:

This project involved setting up a domain controller (DC-1) on Windows Server 2025 and a client machine (Client-1) on Windows 11 within the same Azure virtual network. Key configurations included assigning a static private IP to the domain controller, modifying DNS settings on Client-1 to point to DC-1, and verifying successful network communication and DNS resolution using PowerShell tools.

Tools & Technologies Used

- Microsoft Azure Portal
- Windows Server 2025 (DC-1)
- Windows 11 Pro VM (Client-1)
- Azure Virtual Network and Subnet
- PowerShell
- Remote Desktop Protocol (RDP)

Key Tasks Performed

- Created a Resource Group and deployed a Virtual Network with Subnet

Create a resource group ...

Basics Tags Review + create

[Automation Link](#)

Basics

Subscription	Azure subscription 1
Resource group name	Active-Directory-Lab
Region	East US 2

Tags

None

Resource group named Active-Directory-Lab created

Create virtual network ...

Basics Security IP addresses Tags Review + create

[View automation template](#)

Basics

Subscription	Azure subscription 1
Resource Group	Active-Directory-Lab
Name	Active-Directory-VNet
Region	East US 2

Security

Azure Bastion	Disabled
Azure Firewall	Disabled
Azure DDoS Network Protection	Disabled

IP addresses

Address space	10.0.0.0/16 (65,536 addresses)
Subnet	default (10.0.0.0/24) (256 addresses)
- Private subnet	Enabled

Tags

Virtual Network named Active-Directory-VNet created

- Provisioned “DC-1” VM (Windows Server 2022) and set its NIC Private IP to static

Virtual machines Get started

+ Create Switch to classic Reservations Manage view Refresh Export to CSV Open query Assign tags Start Restart Stop Delete Service

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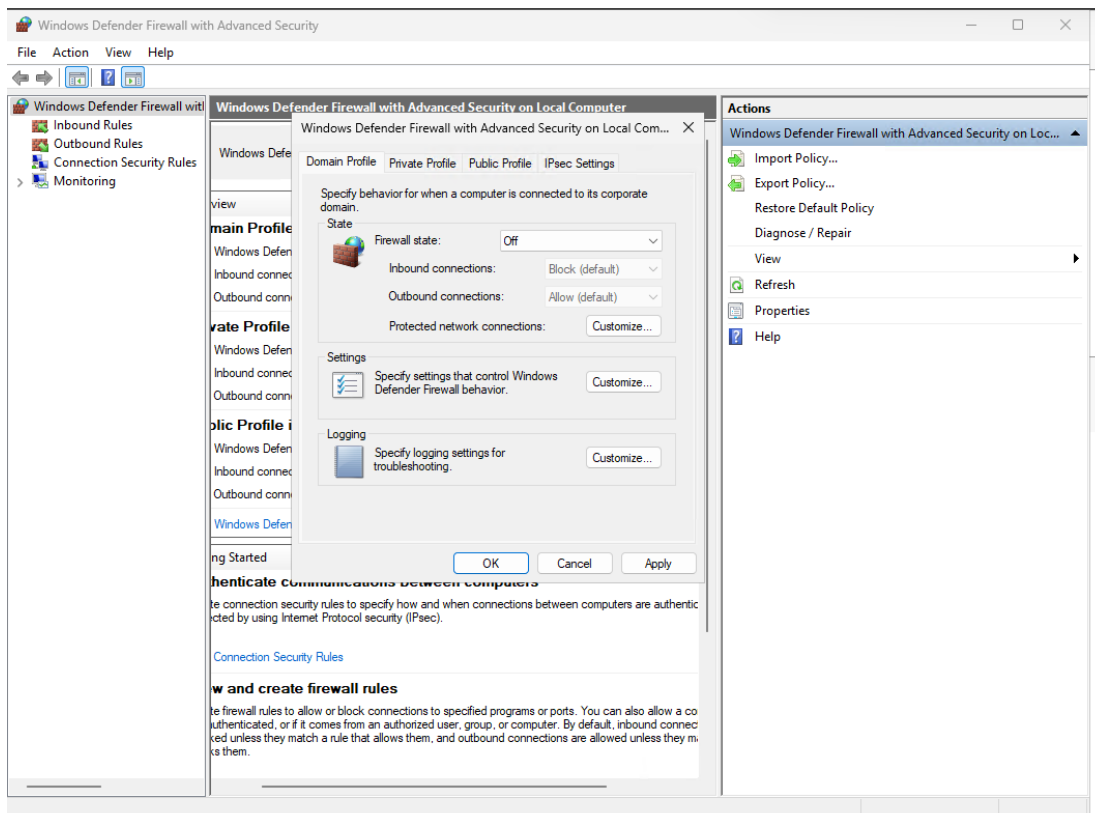
Filter for any field... Subscription equals all Type equals all Resource Group equals all Location equals all + Add filter

Name	Subscription	Resource Group	Location	Status	Operating system	Size	Public IP address
dc-1	Azure subscription 1	Active-Directory-Lab	East US 2	Running	Windows	Standard_D2s_v3	20.75.89.245

+ Add Make primary Delete

Name	IP Version	Type	Private IP Address	Public IP Address
ipconfig1	IPv4	Primary	10.0.0.4 (Static)	20.75.89.245 (dc-1-ip)

- Disabled Windows Firewall on DC-1 for testing purposes



Changed ipconfig from dynamic to static



- Created “Client-1” VM (Windows 11), attached it to the same region and VNet

Virtual machines Get started

+ Create Switch to classic Reservations Manage view Refresh Export to CSV

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Filter for any field... Subscription equals all Type equals all Resource Group equals all Lo

<input type="checkbox"/>	Name ↑		Subscription	Resource Group	Location
<input type="checkbox"/>	 client-1	...	Azure subscription 1	Active-Directory-Lab	East US 2
<input type="checkbox"/>	 dc-1	...	Azure subscription 1	ACTIVE-DIRECTOR...	East US 2

- Configured Client-1’s DNS to point to DC-1’s private IP and restarted the VM

Home > Compute infrastructure | Virtual machines > client-1 | Network settings > client-1887_z1

client-1887_z1 | DNS servers

Network interface

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Tags

Resource visualizer

Settings

- IP configurations
- DNS servers**
- Network security group
- Properties
- Locks

Monitoring

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Help

DNS servers

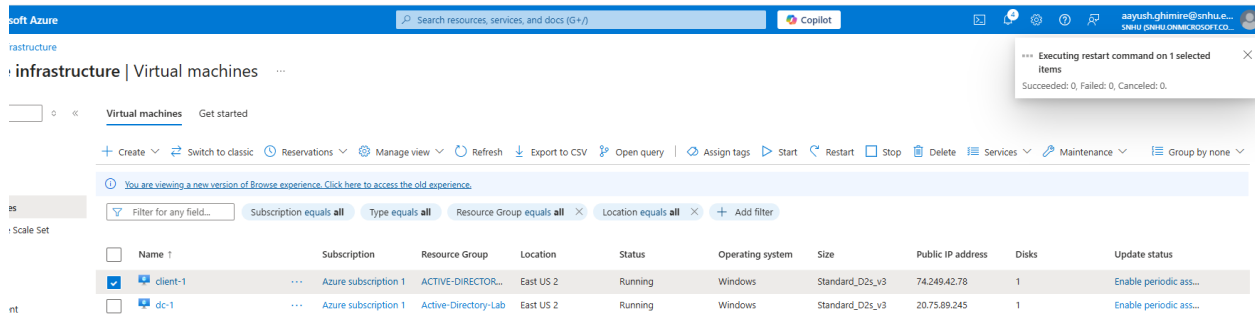
☐ Inherit from virtual network ☒ Custom

DNS server

10.0.0.4

Add DNS server

Updating the DNS servers for this network interface may restart the virtual machine to w



Restarting client 1

- Verified connectivity by successfully pinging DC-1 from Client-1 using ping cmd

```
Administrator: Windows PowerShell
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Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\labuser> ping 10.0.0.4

Pinging 10.0.0.4 with 32 bytes of data:
Reply from 10.0.0.4: bytes=32 time=1ms TTL=128
Reply from 10.0.0.4: bytes=32 time=1ms TTL=128
Reply from 10.0.0.4: bytes=32 time=1ms TTL=128
Reply from 10.0.0.4: bytes=32 time=1ms TTL=128

Ping statistics for 10.0.0.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 1ms, Average = 1ms
PS C:\Users\labuser>
```

- Confirmed DNS settings on Client-1 using ipconfig /all in PowerShell

```
Administrator: Windows PowerShell
PS C:\Users\labuser> ipconfig /all

Windows IP Configuration

Host Name . . . . . : client-1
Primary Dns Suffix . . . . . :
Node Type . . . . . : Hybrid
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No
DNS Suffix Search List. . . . . : reddog.microsoft.com

Ethernet adapter Ethernet:

Connection-specific DNS Suffix . : reddog.microsoft.com
Description . . . . . : Microsoft Hyper-V Network Adapter
Physical Address. . . . . : 7C-1E-52-D5-49-B7
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . : fe80::1be6:d755:3868:d338%4(Preferred)
IPv4 Address. . . . . : 10.0.0.5(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Lease Obtained. . . . . : Wednesday, July 23, 2025 5:46:22 PM
Lease Expires . . . . . : Sunday, August 30, 2161 12:21:32 AM
Default Gateway . . . . . : 10.0.0.1
DHCP Server . . . . . : 168.63.129.16
DHCPv6 IAID . . . . . : 108797522
DHCPv6 Client DUID. . . . . : 00-01-00-01-30-12-D4-A6-7C-1E-52-D5-49-B7
DNS Servers . . . . . : 10.0.0.4
NetBIOS over Tcpip. . . . . : Enabled

PS C:\Users\labuser> |
```

Skills Demonstrated

- Azure VM provisioning and network configuration
- Static IP and DNS setup in virtual environments
- Client-server connectivity troubleshooting
- PowerShell command-line network diagnostics
- Understanding of domain controller and DNS interactions

Challenges & Solutions

Challenge: Ensuring proper DNS resolution between VMs

Solution: Assigned static IP to DC-1 and correctly configured Client-1's DNS settings followed by restart to apply changes

Results & Takeaways

- Successfully configured a domain controller and client environment in Azure

- Gained practical experience with virtual networking, DNS resolution, and connectivity validation
- Strengthened skills in cloud-based infrastructure setup and testing